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13 On the Internationalization of the Japanese Yen

Hiroo Taguchi

The internationalization of the yen is a widely discussed topic, among not only economists but also journalists and even politicians. Although various ideas are discussed under this heading, three are the focus of attention: First, and the most narrow, is the use of yen by nonresidents. Second is the possibility of Asian economies forming an economic bloc with Japan and the yen at the center. Third, is the possibility that the yen could serve as a nominal anchor for Asian countries, resembling the role played by the deutsche mark in the European Monetary System (EMS).

Sections 13.1–13.3 of this paper try to give a broad overview of the key facts concerning the three topics, above. The remaining sections discuss the international role the yen could play, particularly in Asia.

13.1 The Yen as an Invoicing Currency

Following the transition to a floating exchange rate regime, the percentage of Japan's exports denominated in yen rose sharply in the early 1970s and continued to rise to reach nearly 40 percent in the mid-1980s, a level since maintained (table 13.1). There is a marked difference according to export destination—while yen is rarely used vis-à-vis exports to the United States, nearly half of all exports to Asian countries are invoiced in yen.

The yen is even less used for invoicing imports into Japan. However, the

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Table 13.1 Use of Yen as Invoicing Currency in Japan's Trade (% of value)

	1970	1975	1980	1985	1987	1990
Exports to:						
World	0.9	17.5	29.4	39.3	33.4	37.5
United States	—	—	—	19.7[a]	15.0	16.2
European Community	—	—	—	51.3[a]	44.0	42.1
Southeast Asia	—	—	—	47.3[a]	41.1	48.9
Imports from:						
World	0.3	0.9	2.4	7.3[b]	10.6	14.5
United States	—	—	—	—	9.2	11.6
European Community	—	—	—	—	27.3	26.9
Southeast Asia	—	—	—	—	11.5	19.4

Sources: Ministry of International Trade and Industry (MITI), *Statistics on Export Confirmation (Yushutu Kakuninn Toukei)* and *Statistics on Import Report (Yunyuu Houkoku Toukei)* (Tokyo, various issues).

[a]Based on number of export confirmations.

[b]As of FY 1985.

percentage of yen-denominated imports has been rising steadily since the 1980s, especially from Asian countries. In trade among third countries ("vehicle currency"), the use of the yen is almost negligible.

The limited utilization of domestic currency in invoicing Japan's trade is in sharp contrast with the situation in other major industrial countries (table 13.2). There are a number of reasons for this.[1] First, and perhaps most important, there is a significant historical (or "hysteresis") element involved in selecting a transaction currency, which works naturally for "old" international currencies like the U.S. dollar and the pound sterling. However, there are also several other reasons.

If the level of expected profit from trade is given, both exporters and importers will seek the smallest possible fluctuation in trading profits, assuming they are risk-averse. However, they should be willing to accept greater profit fluctuation if the expected profit is also higher. Therefore, the choice of which currency to use should depend primarily on whether the cost of hedging exchange rate risk is lower for the exporter or the importer.

One way to manage exchange rate risk is to pass through exchange rate fluctuations to input and output prices. With regard to input prices, the larger the share of imports in total production costs and the more dependent the home country is on trade, the easier it is to mitigate the impact of exchange rate movements through changes in input costs like wages and material prices. With regard to output prices, it should be easier to pass through increases to the consumer if there are few or no domestic substitutes in the importing country.

1. For discussions on the invoicing currency role of the Japanese yen, see also Taguchi (1982), Tavlas and Ozeki (1991), Kawai (1992), and Takeda and Turner (1992).

To a considerable extent these factors explain the relatively high utilization of domestic currency for invoicing the exports of major developed countries, and vice versa with respect to imports, since they tend to export industrial goods with a high degree of differentiation and import primary products for which there are few domestic substitutes. The small use of the yen for Japanese imports seems to be consistent with the very high proportion of food, fuel, and raw materials in Japan's total import composition, e.g., 53 percent in 1988, as compared to 25 percent in the case of Germany.

Another factor that also seems to help explain the tendency to invoice Japan's trade in foreign currencies is the existence of large trading companies in Japan. These companies, which handle the bulk of both Japan's exports and imports, have a relative advantage in managing foreign exchange risk compared with their trading counterparts. They enjoy economies of scale in terms of risk management; moreover, they are able to offset a considerable portion of their risk exposure stemming from their export business with that from imports.

Another possible factor is the strong preference of Japanese manufacturers, relative to their trading partners, for stable production levels, which perhaps reflects Japan's life-long employment system. Thus, to minimize fluctuations in foreign demand occasioned by exchange rate movements, they tend to have their exports denominated in the currency of the importer.

The explanations provided above seem to be broadly consistent with several important observations: (i) the proportion of exports invoiced in yen has risen as Japanese export goods have become more differentiated; (ii) invoicing in yen is not common for exports to the United States (which is the single largest export market for Japan and where importers are less experienced in managing foreign exchange risk), while it is relatively common for exports to Southeast Asia (which is a more marginal market than the United States and where traders are more familiar with handling exchange rate risk); and (iii) the increase in yen-invoiced imports from Southeast Asia reflects the growth in imports from Japanese implants (whose cost structure has a high yen component).

Table 13.2 **Share of Trade Denominated in Domestic Currency of Selected Industrial Countries (% of value)**

	Exports		Imports	
Country	1980	1988	1980	1988
United States	97.0	96.0	85.0	85.0
Germany	82.3	81.5[a]	43.0	52.6
France	62.5	58.5	33.1	48.9
United Kingdom	76.0	57.0	38.0	40.0
Italy	36.0	38.0[a]	18.0	27.0[a]
Japan	29.4	34.3	2.4	14.1

Source: Tavlas and Ozeki (1991).

[a]As of 1987.

13.2 Use of Yen in International Finance

13.2.1 Capital Market

Until the mid-1980s, the bulk of international bonds (Euro-bonds plus foreign currency bonds) was denominated in U.S. dollars, followed by deutsche marks and Swiss francs. In fact, around 80 percent of newly placed international bonds were denominated in these three currencies (table 13.3). Following a series of liberalization measures, the share of yen-denominated bonds started to rise in the second half of the 1980s and now accounts for about 13 percent of total new issues. However, it should be noted that this recent increase reflects, in addition to basic factors such as lower issue fees and fewer regulatory encumbrances in the overseas markets, partly a temporary situation whereby many Japanese companies had difficulty raising funds in the stock market due to the drastic fall in stock prices and thus tried to raise funds abroad. A great share of those bonds were apparently purchased by affiliates of Japanese companies and thus in that sense could be considered de facto domestic issue.

13.2.2 International Bank Loans

The proportion of yen-denominated loans was negligible in the 1970s, but rose sharply in the 1980s when Japanese banks tried to establish themselves overseas (table 13.4). However, it has leveled off recently, reflecting mainly the increasingly cautious behavior of Japanese banks abroad, influenced by the Bank for International Settlements (BIS) capital adequacy ratio and problems involving sovereign loans to some developing countries.

Although yen loans still play only a modest role globally, they are becoming common in Asian countries. Table 13.5 gives a currency breakdown of the total foreign debt of selected Asian countries (Korea, Thailand, Malaysia, Indonesia, and the Philippines). The proportion of yen-denominated debt in the total borrowing of these countries doubled from 19.5 percent at the end of 1980 to

Table 13.3 **Currency Composition of International Bonds (% of new issues)**

Currency	1975	1980	1985	1990	1991
U.S. dollar	50.6	42.7	60.6	33.3	28.5
Japanese yen	0.4	4.8	7.7	13.5	12.9
Pound sterling	0.2	3.0	4.2	9.5	9.1
Swiss franc	17.1	19.5	8.9	10.5	7.3
Deutsche mark	16.4	21.9	6.7	8.3	7.1
ECU	—	—	4.1	8.1	11.1
Other	15.3	8.1	7.8	16.8	24.0
Total	100.0	100.0	100.0	100.0	100.0
(billion $ U.S.)	(20.0)	(38.3)	(167.8)	(240.2)	(311.4)

Source: OECD, *Financial Market Trends* (Paris, various issues).

Table 13.4 **Currency Composition of International Bank Lending (% of amount outstanding)**

	1980	1985	1990	1991[a]
U.S. dollar	66.3	64.6	49.8	49.6
Pound sterling	2.7	2.7	4.5	4.0
Japanese yen	2.2	5.7	11.2	11.6
Deutsche mark	14.4	11.3	14.5	13.2
Swiss franc	7.0	6.4	5.5	5.0
ECU	0.0	2.2	3.3	3.8
Other	7.4	7.1	11.2	12.8
Total	100.0	100.0	100.0	100.0
(billion $ U.S.)	(1,500.1)	(2,557.2)	(6,132.4)	(5,735.4)

Source: BIS, "International Banking and Financial Market Developments" (Basle, various issues).
[a]First nine months of 1991.

Table 13.5 **Currency Composition of External Debt in Southeast Asian Countries (%)**

	1980		1985		1990	
	Yen	Dollar	Yen	Dollar	Yen	Dollar
Korea	16.6	53.5	16.7	60.3	29.5	32.4
Thailand	25.5	39.7	36.1	25.5	43.5	20.8
Malaysia	19.0	38.0	26.4	50.6	37.1	35.6
Indonesia	20.0	43.5	31.7	30.7	39.3	18.5
Philippines	22.0	51.6	24.9	47.8	40.5	34.7
Total of above	19.5	47.3	25.8	44.7	37.9	27.0
(billion $ U.S.)	(45.2)		(93.5)		(115.6)	

Source: Tavlas and Ozeki (1991).

37.9 percent at the end of 1990. This rapid increase owes partly to currency revaluation occasioned by the appreciation of the yen in the second half of the 1980s, as well as to an increase in official yen loans which reflects efforts to increase official development aid (ODA).

13.2.3 Yen as a Reserve Currency

To obtain a broad idea of the use of the yen as a reserve currency in the private sector, it should be noted that the proportion of yen in total Euro-deposits is growing steadily, but was still only 5.0 percent at the end of 1990, compared with 55.2 percent for the U.S. dollar and 13.8 percent for the deutsche mark (table 13.6). The yen's share is about the same as that of the Swiss franc. However, Japan's GDP is 13 times larger than Switzerland's, so it is fair to say that the yen is playing only a very modest role in the Euro-deposit market.

Table 13.6 **Currency Composition of Euro-currency Market (deposits outstanding; %)**

	1980	1985	1990	1991[a]
U.S. dollar	71.8	68.7	55.2	55.2
Deutsche mark	13.5	8.9	14.9	13.8
Swiss franc	6.0	6.3	5.2	4.8
Japanese yen	1.5	3.7	5.0	5.0
Pound sterling	2.4	1.7	4.0	3.7
ECU	—	2.7	4.3	5.1
Other	4.8	8.0	11.4	12.4
Total	100.0	100.0	100.0	100.0
(billion $ U.S.)	(1,168)	(1,862)	(4,628)	(4,358)

Source: BIS, "International Banking and Financial Market Developments (Basle, various issues).
Note: Foreign currency–denominated debt outstanding by BIS reporting banks.
[a]First nine months of 1991.

As an official reserve asset, the presence of yen is somewhat greater. The share of yen assets in total official reserves of IMF member countries grew gradually in the 1980s, and reached 9.1 percent at the end of 1990 (table 13.7). In particular, in the portfolios of the official monetary institutions of Asian countries the proportion held in yen is relatively high—17.5 percent at the end of 1990. The fact that the yen is relatively important as an official reserve asset in Asia seems to reflect the growing interdependence between Japan and the Asian countries and the increased (official) yen debts of the latter. The figure was even higher in the second half of the 1980s. However, after having recorded a high of 30.0 percent at the end of 1987 and thus coming quite close to the figure for the U.S. dollar (41.2 percent), the share has since declined.

The rise in the yen's share in the mid-1980s seems to reflect the yen's appreciation, greater desire on the part of Asian authorities to hedge against exchange rate risk in light of increased official borrowing in yen, and undoubtedly some speculative elements seeking capital gains from the further appreciation of the yen.

The background to the subsequent decline is not that obvious. However, it is likely that Asian authorities sought higher interest income by moving out of yen as exchange rate fluctuations moderated at around 120–140 yen/dollar. The fact that the yen's weight in the official reserve portfolios of Asian countries displayed large swings in a relatively short period suggests that the yen still remains a kind of secondary reserve asset for them in the sense that profitability, in addition to liquidity, is a significant motive for holding the currency.

13.2.4 Foreign Exchange Market

Looking at the volume of yen transactions on foreign exchange markets, in 1980 in the New York market, for example, U.S. dollar/yen transactions accounted for only 10.2 percent of total transactions; however, by 1989 this fig-

ure had grown to 25.2 percent, closer to the 32.9 percent for U.S. dollar/deutsche mark transactions (table 13.8). In the world's major markets as a whole (table 13.9), transactions involving yen account for 27 percent of total transactions and, together with the deutsche mark, the yen is the second most traded currency after the U.S. dollar. In table 13.9, both currencies involved in a transaction are counted and therefore the total adds up to 200 percent, not 100 percent. Note also that the share of the deutsche mark is somewhat underestimated since transactions in German foreign exchange markets are not included.

It is worthwhile to mention that the yen is the second most traded currency in the Hong Kong and Singapore markets, which have considerable trading volumes even if smaller than those of the three biggest markets, namely, New York, London, and Tokyo. In contrast, the volume of yen-related transactions is still small in the Australian foreign exchange market.

There is no reliable data on international use of the yen in its most direct sense, that is use of yen notes abroad. Anecdotal evidence, however, suggests that although the use of yen notes abroad by Japanese tourists is growing, they are only rarely used for transactions among non-Japanese. The return of yen notes to Japan from abroad amounts to about ¥1 trillion per year. Assuming that the notes remain abroad for an average of three months (piecemeal information suggests that the actual stay is shorter), the outstanding amount of yen

Table 13.7 **Currency Composition of Identified Official Foreign Exchange Holdings of IMF Member Countries (%; year-end data)**

Countries	1970	1975	1980	1985	1990
All					
U.S. dollar	77.2	79.5	68.6	65.0	56.4
Japanese yen	0.0	0.5	4.4	8.0	9.1
Deutsche mark	1.9	6.3	14.9	15.2	19.7
Pound sterling	10.4	3.9	2.9	3.0	3.2
French franc	1.1	1.2	1.7	0.9	2.1
Swiss franc	0.7	1.6	3.2	2.3	1.5
Other	8.8	7.1	4.3	5.6	8.0
Total	100.0	100.0	100.0	100.0	100.0
Asian					
U.S. dollar			48.6	44.8	56.4
Japanese yen			13.9	26.9	17.5
Deutsche mark			20.6	16.4	15.2
Pound sterling			3.0	4.1	6.4
French franc			0.6	0.9	0.5
Swiss franc			10.6	4.9	3.0
Other			4.7	2.1	1.0
Total			100.0	100.0	100.0

Source: IMF, *Annual Report* (Washington, D.C., various issues).

Table 13.8 **Currency Composition of Transactions on the New York Foreign Exchange Market (average of daily transaction value; %)**

	March 1980	April 1983	March 1986	April 1989
U.S. dollar/Japanese yen	10.2	22.0	23.0	25.2
U.S. dollar/deutsche mark	31.7	32.5	34.2	32.9
U.S. dollar/pound sterling	22.8	16.6	18.6	14.6
U.S. dollar/Swiss franc	10.1	12.2	9.7	11.8
Cross transactions	—	0.2	—	3.6
Total[a]	100.0	100.0	100.0	100.0
(billion $ U.S.)	(18.0)	(26.0)	(58.5)	(128.9)

Sources: BIS, "Survey of Foreign Exchange Market Activity" (Basle, various issues); and other sources.

[a]Total includes transactions involving currencies other than those listed above and so is not the sum of numbers above.

notes overseas would be less than 1 percent of total notes outstanding. This is in sharp contrast with U.S. dollar notes, which are widely used as a "parallel currency" in many developing countries and recently in Eastern Europe: according to some unpublished sources, a variety of evidence suggests that more than half of all U.S. currency outstanding is held abroad.

13.3 Background to the Increase in the International Use of Yen

To summarize developments reviewed in the previous section: the yen emerged as an international currency in 1970, a trend which grew rapidly in the mid-1980s. This growth owed much to the greater international presence of the Japanese economy and also partly to the revision of the Foreign Exchange and Foreign Trade Control Law in 1980, which saw a major change in principle, from "prohibited if not explicitly allowed" to "allowed if not explicitly prohibited." Growth has decelerated considerably since the late 1980s, principally because potential demand for yen had already been satisfied to a large extent.

However, it is premature to draw the conclusion that the international use of yen is likely to grow only pari passu with the growth of the Japanese economy. For a currency to become widely used as an international currency, there must be (see, e.g., Tavlas and Ozeki 1992; Black 1990): (i) confidence that its value will be stable, which means not only low inflation with little fluctuation but also political stability in the home country, and (ii) the existence of stable financial markets in the home country where a wide range of instruments are traded freely in considerable volume.

13.3.1 Inflation

Table 13.10 compares both the level and fluctuation of inflation in selected industrial countries and Asian economies. Together with Germany, Japan has

Table 13.9 **Currency Composition of Transactions on Major Foreign Exchange Markets (billion $ U.S.)**

Market	U.S. Dollar	Deutsche mark	Japanese Yen	Pound Sterling	ECU	Other	Total
United Kingdom	216 (90)	70 (29)	42 (17)	74 (31)	4.0 (1.7)	77 (32)	241 (200)
United States	167 (96)	58 (33)	48 (28)	25 (14)	0.5 (0.3)	49 (28)	174 (200)
Japan	138 (95)	14 (10)	116 (80)	5.4 (4)	—	17 (12)	145 (200)
Singapore	60 (95)	18 (29)	18 (29)	11 (17)	—	20 (32)	63 (200)
Hong Kong	56 (93)	12 (20)	15 (25)	7.7 (13)	0.1 (0.2)	29 (48)	60 (200)
Australia	36 (97)	5.6 (15)	3.7 (10)	3.1 (8)	—	26 (70)	37 (200)
Total of major 21 markets	838 (90)	247 (27)	253 (27)	138 (15)	8 (1)	382 (41)	932 (200)

Source: BIS, "Survey of Foreign Exchange Market Activity" (Basle, February 1990).

Notes: Daily average in April 1989. Number in parentheses is currency's share as a percentage of total transactions.

Table 13.10 **Inflation Rate in Selected Countries (%)**

	Average		Standard Deviation	
Country	1/80–12/85	1/86–10/91	1/80–12/85	1/86–10/91
Japan	3.6	1.6	2.2	1.4
United States	6.9	4.0	3.9	1.3
Germany	4.1	1.6	1.7	1.4
France	10.3	3.1	3.0	0.5
Italy	15.3	5.8	4.4	0.9
Belgium	7.0	2.3	1.4	1.1
Korea	11.0	6.1	10.8	2.8
Hong Kong	10.2	7.7	4.0	2.8
Taiwan	6.6	2.4	8.4	2.0
Philippines	21.1	8.9	16.0	6.0
Singapore	4.2	1.6	3.6	1.9
Indonesia	11.2	7.7	4.5	1.8
Malaysia	5.0	2.2	3.0	1.4
Thailand	7.5	4.0	6.9	1.8
Australia	8.7	7.4	2.8	1.7
New Zealand	13.0	8.6	4.9	5.2

Source: IMF, "International Financial Statistics" (Washington, D.C.).

recorded the best performance in terms of both measures in the last decade, although the difference among countries has been narrowing in recent years.

13.3.2 Political Stability

Price stability alone is not sufficient to assure confidence in a currency: political instability in an issuing country may undermine confidence in its currency even if inflation is not a problem. This is a major reason that the U.S. dollar has maintained its role as the dominant international currency. It could be argued that in light of recent regime changes in Eastern Europe and the former Soviet Union, the importance of this "safe haven" function of the U.S. dollar is diminishing in favor of the yen. However, in Asia, geopolitical instability still persists, most notably in the form of North Korea and Indochina. In addition, trade and social friction between Japan and the United States may also work against the wider use of the yen worldwide and in Asia in particular.

13.3.3 Current Account Surplus

At least in the early phase of "internationalization," a (large) current account surplus is considered important. Indeed, it cannot be denied that the fact that Japan has consistently recorded a large current account surplus since the early 1980s has been conducive to wider use of the yen outside Japan. For one thing, Japanese financial institutions were in an advantageous position in recycling that surplus to deficit countries. Perhaps more important, this large accumu-

Table 13.11 **Size of Short-term Money Markets in Japan, the United States, and Germany (billion $ U.S.)**

	1981 (year-end)	1985	1990
Japan	84.8 (7.3)	182.3 (13.5)	676.2 (22.8)
United States	964.3 (31.6)	1260.6 (31.4)	1760.8 (32.2)
Germany	101.8 (14.9)	128.8 (20.7)	497.9 (33.2)

Source: Bank of Japan, *Comparative Economic and Financial Statistics—Japan and Other Major Countries* (Tokyo, various issues).

Note: Figures in parentheses are ratio to GNP.

lated surplus, which exceeded $530 billion during 1980–91, has certainly helped foster the credibility of Japan's financial institutions, markets, and currency.

13.3.4 Financial Markets

The size of Japan's money markets grew considerably in the 1980s (table 13.11) and, taking into account the recent progress of interest rate deregulation, as well as the size of capital markets, it is fair to say that the condition of having "wide, deep, and free financial markets" is already met to a large extent. However, it is also true that there is still significant room for improvement in many respects, inter alia, with regard to the transparency of financial institutions and their transactions, freedom concerning the placement of new instruments, and taxation on financial and capital transactions.

13.4 The Potential Role of the Yen as a "Nominal Anchor" for Asia

In sum, the conditions necessary for the yen to assume a greater role than it currently plays are already broadly met, even if there is some room for improvement. What role, then, should the yen play? This section discusses the possibility of a "yen bloc" in Asia.

A brief look at trade figures shows that intraregional trade among major economies in Asia and Oceania[2] (hereafter referred to as Asia) is growing steadily, accounting for about 40 percent of the total trade of the economies in the region (table 13.12). However, it should also be noted that trade with the United States accounts for about 20 percent. The fact that the United States is still by far the single most important trading partner for Asian economies no doubt explains why the U.S. dollar plays an important role in the region.

Japan's direct investments in the region grew considerably in the second half of the 1980s (table 13.13). It is true that as a proportion of total investments, they are still not very large; in fact, the proportion was much larger in the

2. Japan, Korea, Hong Kong, Taiwan, Singapore, Malaysia, Philippines, Indonesia, Thailand, Australia, New Zealand, and China.

Table 13.12 **Country Composition of Trade in Asian Countries (%)**

	1975	1980	1985	1990
United States	19.58	19.28	25.12	22.55
Asia (A)	33.35	34.69	36.37	39.13
			(39.16)	(43.47)
Japan	11.03	10.73	10.32	11.09
Ratio of trade in Asian countries to world trade (B)	12.33	14.26	17.06	18.69
			(19.17)	(20.76)
A/B	2.71	2.43	2.13	2.09
			(2.04)	(2.09)

Sources: IMF, *Direction of Trade* (Washington, D.C., various issues); other sources.

Notes: Trade with Taiwan is included only in figures in parentheses.

Annual growth rates of world trade were 18.5, −0.6, and 12.9 percent for the periods 1975–80, 1980–85, and 1985–90, respectively. Annual growth rates of Asian trade (excluding trade with Taiwan) were 22.0 and 3.9 percent for the first two periods and (including trade with Taiwan) was 14.7 percent for the last period.

Table 13.13 **Japan's Outward Direct Investment by Country**

	1975	1980	1985	1990	Total from 1951
Total (billion $ U.S.)	32.8	46.9	122.2	569.1	3,108.1
Country share (%)					
United States	26.8	31.6	44.2	45.9	42.0
Europe	10.2	12.3	15.8	25.1	19.1
Southeast Asia[a] (A)	32.8	24.8	10.8	11.6	14.2
China (B)	0.0	0.3	0.8	0.6	0.9
Australia (C)	4.8	9.3	3.8	6.5	5.2
New Zealand (D)	0.1	0.2	0.2	0.4	0.3
A+B+C+D	37.7	34.7	16.4	19.7	20.5

Source: Ministry of Finance (Tokyo).

Note: Years are fiscal years.

[a]Includes Korea, Hong Kong, Taiwan, Singapore, Malaysia, the Philippines, Indonesia, and Thailand.

1970s. However, while investments in the 1970s were concentrated in a few countries like Indonesia and the Philippines, they are now much more widespread geographically.

Another fact that stands out is the recent growth in direct investment between the so-called newly industrialized economies (NIEs) and Association of Southeast Asian Nations (ASEAN) countries. Tables 13.14 and 13.15 give a breakdown of direct investments in Indonesia and Thailand by investor country. In the case of Thailand, Japan is the largest investor, accounting for 37.2 percent of total investments in the 1970–89 period, followed by Hong Kong,

Singapore, and Taiwan together at 22.7 percent (which exceeds the U.S. figure of 20.7 percent). The importance of the NIEs as investors is becoming even more pronounced. In Indonesia, NIEs account for more than half of nonpetrol direct investment projects.

Such trade and investment data suggest that economic interdependence is growing rapidly among Asian economies. However, since growth in intraregional trade and investments is partly a reflection of the higher growth of the region compared to that of the rest of the world, one cannot go so far as to say that Asia is on the way to forming an economic bloc. As shown in Frankel (1992), the intraregional trade bias index (defined as the share of intraregional trade in the total trade of a region divided by the share of trade of that region

Table 13.14 **Direct Investment in Nonpetrol Projects to Indonesia**

	1986	1987	1988	1989	Total 1986–89
Total (million $ U.S.)	245	498	2,498	4,328	7,569
Country share (%)					
Japan	8.0	25.9	6.8	31.1	22.0
United States	8.3	5.3	8.1	1.2	4.0
Europe	27.0	13.1	9.6	6.0	8.4
NIES	33.5	33.4	67.5	50.2	54.2
Hong Kong	4.0	16.9	10.6	9.7	10.3
Korea	7.7	9.8	15.9	21.6	18.5
Singapore	11.7	4.5	3.9	6.3	5.5
Taiwan	10.1	2.3	37.1	12.5	19.9
Other Asia	14.7	1.4	1.1	2.4	2.3
Other	8.5	20.9	6.9	9.1	9.1

Source: Pangestu (1991).

Table 13.15 **Direct Investment to Thailand by Country (cumulative investment since 1970)**

	1974	1981	1986	1989
Total amount received (million $ U.S.)	416	1,282	2,662	5,871
Country share (%)				
Japan	27.9	27.4	29.5	37.2
United States	38.5	33.9	30.8	20.7
Other OECD countries	11.8	14.0	15.7	13.2
Three NIEs	16.6	18.8	15.9	22.7
Hong Kong	11.1	10.5	10.3	11.1
Singapore	5.3	8.1	5.0	5.4
Taiwan	0.5	0.2	0.6	6.2
Four ASEAN countries	1.7	1.2	0.9	0.5
Other	3.6	4.8	7.2	5.8

Source: Tambunlertchai and Ramstetter (1991).

in world trade) declined for Asia from 2.2 in 1980 to 1.9 in 1989, in contrast to a rise in EC countries from 1.3 to 1.5. Even taking into account that Frankel's estimate does not include Taiwan and that trade figures in Asia for 1989 were negatively influenced by the Tienanmen Square incident, this estimate persuasively suggests that Asian countries are not moving toward a "Fortress Asia"–type bloc.

These trends seem to suggest that the yen is not likely to replace (at least not in the foreseeable future) the U.S. dollar as the key currency, even in Asia, with respect to the three traditional functions of money: as a unit of account (invoicing currency), as a means of transaction, and as a store of value (international financial asset).

A more meaningful role for the yen in a potential "yen zone" in Asia would be one resembling that of the deutsche mark in Europe.

The EMS is generally viewed as a de facto deutsche mark bloc. However, that does not mean that the deutsche mark is in every respect the most important foreign currency for non-German EMS member countries. For example, deutsche marks constitute only about 23.4 percent of the total foreign reserves of EMS countries. Although this is considerable, it is well below the 57.9 percent held in U.S. dollars. To give another example, 43.8 percent of transactions in French foreign exchange markets involve the deutsche mark, compared with 71.9 percent involving the U.S. dollar (note that the currency breakdown total adds up to 200 percent). Similar trends are observed in other EMS countries.

The reason that the EMS countries are nevertheless considered a deutsche mark bloc is that the deutsche mark is playing the important role of "nominal anchor" in maintaining price stability in EMS member countries.

A currency may serve as a nominal anchor for other countries in various ways. In its most rigid form, it is the currency against which exchange rates are pegged. This is the role the deutsche mark presently plays within the EMS. However, a currency can also serve as an anchor for price stability in a less formal way, if other countries attempt to keep their respective inflation rates in line with that of the nominal anchor country, or if monetary authorities, in conducting monetary policy, pay due attention to developments in that country.

It is this kind of mild nominal anchor role that the yen might play in the future. However, before examining that possibility in detail, we should first briefly review foreign exchange arrangements in Asian and Pacific region countries.

While Hong Kong links its currency to the U.S. dollar and Australia and New Zealand let their currencies float, other Asian countries officially link their currencies to a basket which includes, inter alia, the U.S. dollar and Japanese yen. However, the composition of these baskets is not officially announced and, in practice, they could be considered de facto "managed floating," with the main focus on the exchange rate against the U.S. dollar.

Accordingly, fluctuations in the exchange rates of their respective currencies

vis-à-vis the U.S. dollar, measured in terms of variation coefficients, tend to be smaller than in those against the yen (table 13.16). However, these fluctuations tended to be generally smaller in the second half of the 1980s than in the first. Moreover, in the case of the Korean won, volatility vis-à-vis the yen was in fact slightly smaller than vis-à-vis the U.S. dollar, and in the case of the Singapore dollar, the difference was only very marginal.

In fact, it seems that in forming their monetary and foreign exchange policy, Asian authorities are becoming increasingly more sensitive to developments in Japan. This seems to be quite natural since these economies are competing more and more with Japan in world export markets and therefore have an interest in keeping their inflation rate in line with Japan's.

In the previous sections and the first part of this section, we reviewed the linkage between Japan and Asian countries in terms of the scale of trade, direct investment, and financial transactions. In considering the potential role of the yen as a nominal anchor currency as explained above, however, it is not sufficient to look at these quantitative variables. In fact, the relationship between Asian countries and Japan from the viewpoint of linkage of prices, e.g., interest rates and the prices of goods, is perhaps more relevant. To obtain a broad view of this context, the correlation coefficients of movements in several key variables in Asian countries and those in Japan were estimated and compared with coefficients between the former and those of the United States.

There are several reasons for not employing more sophisticated methods. For one, there are differences in the quality of data among countries. Moreover, in light of the difference in the depth and structure of financial markets, some reservations are in order about the international comparability of data. In addi-

Table 13.16 **Coefficient of Variation of Selected Exchange Rates vis-à-vis U.S. Dollar and Japanese Yen (coefficient variable to dollar and yen rate)[a]**

	1980–85		1986–91	
	Dollar	Yen	Dollar	Yen
Korea	0.116	0.125	0.096	0.085
Singapore	0.023	0.062	0.085	0.089
Malaysia	0.041	0.066	0.033	0.111
Thailand	0.094	0.099	0.014	0.082
Philippines	0.389	0.386	0.119	0.171
Australia	0.169	0.217	0.077	0.160
New Zealand	0.236	0.266	0.075	0.169
Indonesia	0.248	0.248	0.136	0.193

Note: Countries in Asia and Oceania use the following exchange rate systems: Korea, market average rate (allows certain amount of fluctuation centering on market average rate the previous day); Australia, New Zealand, and Taiwan, floating exchange rate; Hong Kong, dollar-pegged (HK$7.8 = $1 U.S.); Malaysia, Singapore, and Thailand, currency basket (basket not publicized); Indonesia and the Philippines, managed floating exchange rate.

[a]Standard deviation/average.

tion, since the definition of "nominal anchor" is, by nature, rather vague, it might be too much to investigate causal relationships in different countries.

Table 13.17 shows the correlation coefficients of movements in Asian short-term interest rates with those of Japan and the United States. The coefficients were low in the case of Japanese versus Asian interest rates; in fact, negative coefficients were obtained in many cases.

However, these low coefficients might not be sufficient justification to come to any decision. Using a simple interest rate function and concentrating on more recent data, Frankel (1992) obtained results suggesting that the influence of Japan's short-term interest rates (relative to interest rates of the United States and Germany) on rates in Hong Kong and Singapore was rising (table 13.18). Moreover, if two countries are influenced by different real shocks, efforts by either to bring its inflation rate in line with the other's may widen, rather than narrow, the difference between nominal interest rate movements in the two countries. From a theoretical point of view, it would also be interesting to examine the relationship among long-term interest rates, especially real interest rates. However, the lack of free and deep trading markets for long-term instruments in most Asian countries prevent any meaningful analysis in this direction.

Similar exercises were conducted with regard to prices of goods. There remains the problem of which price index to choose. Needless to say, the choice hinges crucially upon the aim of the analysis. If one wants to focus on relative competitiveness in the world market, analysis based on domestic manufactured goods or export goods may be most relevant. On the other hand, to investigate the existence and strength of common external shocks, it would be worthwhile to look at the comovements of import prices. Or, if one is interested in causal relationships, one may try to relate one country's import prices to the export prices of another. However, because the focus here is in the potential of the

Table 13.17 **International Linkage of Short-term Interest Rate Fluctuation (correlation coefficient based on changes from the previous month)**

	1980–85		1986–91	
	United States	Japan	United States	Japan
Korea	0.022	0.077	0.038	0.003
Taiwan	0.201	−0.146	0.053	−0.054
Hong Kong	0.168	0.280	0.087	−0.179
Singapore	0.350	0.153	0.583	0.008
Malaysia	−0.065	−0.076	−0.119	−0.031
Thailand	0.495	0.112	0.138	0.198
Philippines	0.054	0.016	0.081	−0.080
Australia	−0.002	−0.180	0.013	0.270
New Zealand	0.114	−0.444	0.216	0.044

Table 13.18 Japanese and U.S. Interest Rate Effects in Five Pacific Countries

	Constant Term	Tokyo Effect	New York Effect	R^2	D-W
Singapore					
A	−2.29**	0.82**	0.43**	.85	0.53
	(0.84)	(0.07)	(0.09)		
B	3.30**	−0.01	0.27**	.71	0.43
	(0.39)	(0.03)	(0.05)		
C	1.47**	0.29**	0.41**	.72	1.41
	(0.45)	(0.05)	(0.06)		
Australia					
A	−6.66**	0.74**	2.11**	.73	0.19
	(2.32)	(0.18)	(0.26)		
B	13.90**	0.10*	−0.07	.03	0.20
	(1.40)	(0.06)	(0.12)		
C	3.83**	0.07	0.67**	.76	1.36
	(1.13)	(0.21)	(0.20)		
Taiwan					
A	−4.93	1.91**	0.32	.53	1.17
	(4.04)	(0.32)	(0.45)		
B	7.14	0.07	0.10	.05	0.82
	(0.67)	(0.08)	(0.12)		
Korea					
A	−4.08*	1.29**	1.16**	.69	0.78
	(2.33)	(0.19)	(0.26)		
B	11.65**	0.04	0.27**	.55	1.28
	(0.32)	(0.04)	(0.07)		
Hong Kong					
A	−6.40**	0.25*	1.66**	.79	0.59
	(1.51)	(0.15)	(0.17)		

Source: Frankel (1992).

Notes: Table reports regressions of local interest rate against: A—Japanese and U.S. interest rates (1988–91 monthly data), B—Japanese and U.S. interest rates adjusted for expectations of exchange rate changes (reflected in *Currency Forecasters' Digest*), and C—Japanese and U.S. interest rates adjusted for forward discount.

Numbers in parentheses are standard errors.

*Statistically different from 0 at the 90 percent level.

**Statistically different from 0 at the 99 percent level.

yen as a nominal anchor in the conduct of monetary policy, I have decided to concentrate on the consumer price index (CPI), which is the most relevant variable in discussing the main objective of monetary policy, that is, overall price stability. The results are reported in table 13.19.[3]

3. Although the comovement of CPI inflation would be a useful criterion for assessing the role of a currency as a nominal anchor in an informal way, it may not be for assessing the possibility of a fixed exchange rate regime. As De Grauwe (1992) argues, it would be difficult to achieve both convergence on inflation and fixed exchange rates if the differential in productivity growth between tradables and nontradables varies among countries.

Table 13.19 **International Linkage of Price Fluctuation (correlation coefficient based on changes in year-on-year CPI inflation rate; monthly data)**

	1980–85		1986–91	
	United States	Japan	United States	Japan
Korea	0.295	0.004	0.019	0.058
Taiwan	0.015	0.175	0.018	0.176
Hong Kong	−0.119	−0.008	0.055	0.038
Singapore	0.303	0.034	0.440	0.122
Malaysia	0.042	0.027	0.101	0.302
Thailand	0.261	0.211	0.046	−0.036
Philippines	0.175	0.052	−0.156	0.146
Australia[a]	−0.182	0.064	0.128	0.279
New Zealand	0.183	0.071	−0.081	−0.076
Indonesia	0.055	−0.127	0.088	0.052

[a]Based on quarterly data.

It is interesting that, compared to the first half, coefficients tended to be higher in the second half of the 1980s; moreover, the comovement of inflation in Asian countries and Japan, relative to that in the United States, is more pronounced in the latter period. These tendencies are most noticeable between Japan on one hand and Taiwan, Singapore, Malaysia, and Australia on the other.

It is not surprising that the coefficients are not very high, if one considers that it is the second derivative of price level which is examined.[4] Even within Japan, the correlation coefficients between changes in inflation rates vary significantly among different cities. The correlation coefficient between Tokyo and Naha, Okinawa, is not very much higher than that between Japan and Malaysia, for instance.[5]

Not many will deny that the European economies are much more homogeneous with each other than are Asian economies. However, there was little similarity in price movement among European countries in the 1970s, and it was not until the second half of the 1980s that the linkage became obvious.[6]

Table 13.20 shows the correlation coefficients of stock price movements. Here, the similarity of movement becomes more significant, at least in the second half of the 1980s. The linkage between price movements in Asian stock

4. I also calculated correlation coefficients based on the first derivative of CPI, that is, the level of inflation. Naturally, the coefficients were higher than those reported in the paper; however, the general tendency was much the same.

5. During 1980–85, the Naha/Tokyo and Naha/Sapporo correlation coefficients were 0.409 and 0.441, respectively. During 1986–91, these coefficients were 0.377 and 0.717.

6. The Belgium/Germany correlation coefficients for the periods 1970–75, 1976–80, 1981–85, and 1986–91 were −0.013, 0.213, 0.458, and 0.691, respectively. The France/Germany coefficients for these periods were 0.029, 0.102, 0.109, and 0.573.

markets and in Japan's market is almost as close as that between the former and the U.S. stock market. Although these results should be interpreted with caution, not least since the high coefficients are to some extent due to the 1987 stock market crash, they are nevertheless suggestive of the growing interdependence of these markets.

Finally, to summarize these exercises, and also to focus on more recent periods, canonical correlation coefficients were estimated using inflation rates, stock prices, short-term interest rates, and, where reliable data was available, long-term interest rates for the periods 1980–87 and 1988–91 (table 13.21). It is interesting that coefficients in the case of Asian countries vis-à-vis Japan were higher, without exception, for 1988–91 than for 1980–87. Moreover, in many cases, they were higher than, or very close to, coefficients for Asia vis-à-vis the United States. Admittedly, the estimation period may be too short to make too much out of this result. Nevertheless, it also seems to illustrate that the interdependence of Japan and Asian economies has grown remarkably in recent years.

13.5 Tentative Conclusion

It is not easy to draw any firm implication from the facts and results discussed in the previous sections: they provide only piecemeal information, which is sometimes contradictory. Moreover, analysis is simplistic: for example, a relatively high correlation coefficient may only be a coincidence.

Nevertheless, to me at any rate, they seem to suggest that the Japanese yen has the potential to serve as a nominal anchor for Asian countries, though not as formally as the deutsche mark does for Europe now. One may even venture to argue that the Japanese yen is already playing such a role, albeit in a very

Table 13.20 **International Linkage of Stock Price Fluctuation (correlation coefficient based on year-on-year changes; monthly data)**

	1980–85		1986–91	
	United States	Japan	United States	Japan
Korea	−0.202	0.093	0.316	0.381
Taiwan	0.146	0.135	0.253	0.259
Hong Kong	0.281	0.383	0.445	0.211
Singapore	0.251	0.217	0.560	0.334
Malaysia	0.344	0.412	0.530	0.390
Thailand	0.078	−0.016	0.507	0.468
Philippines	0.043	0.162	0.093	0.061
Australia	0.614	0.393	0.649	0.413
New Zealand	0.026	0.147	0.537	0.288

Table 13.21 **Canonical Correlation Coefficients using Changes in Interest Rates, Inflation Rates, and Stock Prices**

	Japan		United States	
	1980–87	1988–91	1980–87	1988–91
Korea	0.451	0.562	0.558	0.584
Taiwan	0.284	0.416	0.417	0.411
Hong Kong	0.354	0.538	0.404	0.584
Singapore	0.392	0.609	0.604	0.704
Malaysia	0.515	0.705	0.603	0.582
Thailand	0.578	0.758	0.618	0.803
Philippines	0.306	0.478	0.393	0.562
Australia	0.554	0.683	0.682	0.699
New Zealand	0.311	0.537	0.372	0.614
Indonesia	0.266	0.361	0.450	0.367

weak sense, since Asian authorities, in formulating their macroeconomic policies, pay attention to Japan's low inflation record.

To what extent, and at what pace, the Japanese yen will become an anchor currency in Asia hinges on many economic and noneconomic factors: e.g., how intraregional trade and investment will develop, the future military presence of the United States in this region, whether political ties among Asian countries become closer, and the development of the U.S. economy.

The development of the U.S. economy is particularly important. As discussed earlier, the U.S. dollar is now by far the dominant currency in Asia. As long as the U.S. economy remains sound and its inflation rate low, the incentive for Asian authorities to pay greater attention to the yen and the Japanese economy in forming their monetary policy may not strengthen significantly. However, if for some reason the performance of the U.S. economy becomes less satisfactory to them, the increase in the importance of the yen may accelerate.

Finally, a greater role for the yen as a nominal anchor for Asian countries is a tendency that should neither be encouraged nor discouraged from the Japanese viewpoint. The decision whether to have the yen serve such a function should be made by the Asian countries themselves. Japan's responsibility is to make sure its financial and capital markets are more convenient and safe for Asian areas, as well as for the rest of the world. Moreover, it is crucial that Japan make every effort to maintain price stability so that Asian countries could use the yen as a nominal anchor if they so decided.

References

BIS (Bank for International Settlements). 1990. Survey of foreign exchange market activity. Basle: Bank for International Settlements, February.

Black, Stanley W. 1990. The international use of currencies. In *The evolution of the international monetary system: How can efficiency and stability be attained?* ed. Yoshio Suzuki, Junichi Miyake, and Mitsuaki Okabe, 175–94. Tokyo: University of Tokyo Press.

De Grauwe, Paul. 1992. Inflation convergence during the transition to EMU. CEPR Discussion Paper no. 658. London: Centre for Economic Policy Research, June.

Frankel, Jeffrey A. 1991. Is a yen bloc forming in Pacific Asia? In *Finance and the international economy*, ed. R. O'Brien and S. Hewin. New York: Oxford University Press.

———. 1992. Is Japan creating a yen bloc in East Asia and the Pacific? NBER Working Paper no. 4050. Cambridge, Mass.: National Bureau of Economic Research.

Kawai, Masahiro. 1992. Yen no Kokusaika (Internationalization of the yen). In *Kokusai Kinyu no Genjo (International finance)*, ed. Takatoshi Ito, 275–326. Tokyo: Yuhikaku.

Pangestu, Mari. 1991. Foreign firms and structural changes in the Indonesian manufacturing sector. In *Direct foreign investment in Asia's developing economies and structural change in the Asia-Pacific Region*, ed. Eric D. Ramstetter, 35–64. Boulder, Colo.: Westview.

Taguchi, Hiroo. 1982. A survey on the international use of the yen. BIS Working Paper no. 6. Basle: Bank for International Settlements, July.

Takeda, Masahiko, and Philip Turner. 1992. The liberalization of Japan's financial markets: some major themes. BIS Economic Papers. Basle: Bank for International Settlements, November.

Tambunlertchai, Somsak, and Eric D. Ramstetter. 1991. Foreign firms in promoted industries and structural change in Thailand. In *Direct foreign investment in Asia's developing economies and structural change in the Asia-Pacific region*, ed. Eric D. Ramstetter, 65–102. Boulder, Colo.: Westview.

Tavlas, George S., and Yuzuru Ozeki. 1991. The Japanese yen as an international currency. IMF Working Paper WP/91/2. Washington, D.C.: International Monetary Fund, January.

———. 1992. The internationalization of currencies: An appraisal of the Japanese yen. Occasional Paper 90. Washington, D.C.: International Monetary Fund, January.

Comment

Kazuo Ueda

This paper provides a well-balanced assessment of the current degree of internationalization of the yen and a quite reasonable speculation about what is likely to happen in the near future. Taguchi supports his argument by using interesting statistics, some of which I see for the first time. I am afraid I do not have much to disagree with.

Taguchi, quite appropriately, differentiates two types of internationalization of a currency: one, playing the role of a key or vehicle currency and, the other, becoming a currency against which other central banks try to peg their currencies. In the world today, the first role is clearly played by the dollar. The deutsche mark is partly playing the second role. I quite agree with Taguchi that

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the two aspects of internationalization can be separate issues and that the yen could increasingly play the second role, especially in Asia.

First, I will argue that the yen is not likely to play the first role in the near future, largely because Japanese money and financial markets are not fully deregulated. Deregulation of the extent that we see in New York or London is certainly a necessary condition for the yen to become a key currency. Thus, we do not have a large scale treasury bond (TB) market. Because of this, the Bank of Japan is having trouble carrying out its daily operations. There are strange taxes—for example, the transactions tax—which have had a serious negative impact on the repurchase agreement (*gensaki*) market for Japanese government bonds (JGBs). And there is nontransparent moral suasion and administrative guidance (*gyouseishido*) everywhere.

Second, I would like to point out a problem with other Asian countries pegging to the yen. Suppose this happened and the Bank of Japan successfully stabilized Japan's CPI at 0–2 percent, as it did in the 1980s. Over the last couple of decades Japanese export prices have been falling steadily relative to the CPI. Hence, zero percent inflation in the Japanese CPI implies a negative inflation rate for Japanese export prices, creating strong deflationary pressure on other countries.

Comment Anne O. Krueger

At a time when there is discussion of Maastricht in connection with the European Single Market and of a Western Hemisphere Free Trade Agreement with the dollar already the regional currency, it is natural that many are discussing the trading and exchange relationships among Asian countries. In this connection, Hiroo Taguchi has performed a valuable service in considering the Japanese yen's potential as the nominal anchor for the exchange rates of the region.

I found his analysis insightful and to the point. I also agree with him that the factors conducive to the use of the yen as an international currency are substantially weaker than those affecting the dollar or the deutsche mark. It was only in the mid-1980s that Japan liberalized the regulations governing yen transactions on capital account. Until that had happened, it was not conceivable that the yen could be an international currency. Even now, although liberalization has proceeded a considerable distance, I suspect that there are still constraints on yen capital account convertibility. The fact that liberalization has only been recent and still may not be complete will limit the yen's role for some time.

Because I am so much in accord with the basic thrust of the paper, I shall use my time to extend his analysis, rather than to comment directly on it. A

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useful starting point, it seems to me, is the old "optimum currency area" discussion pioneered by Mundell (1961). There, Mundell noted that the currency of a country producing only a single commodity (such as bananas or tin) would be of little use as a store of value, since its purchasing power (assuming domestic price stability) reflected nothing more than the price of other commodities in terms of that single commodity.

However, when domestic prices are nominally sticky, exchange rate changes can serve to bring about the necessary relative price adjustments. To make his point, Mundell questioned whether western Canada and the western United States might not form an optimum currency area relative to the eastern parts of both countries, since the West was mineral- and agriculture-rich and the East was more manufacturing-intensive.

Mundell's analysis intentionally neglected the role of public policy in smoothing the resource reallocations that terms of trade changes bring about. Therefore, a second aspect of an optimum currency area—the area within which mechanisms are in place through internal transfers to smooth adjustments that are needed—was not considered.

In many regards, this second aspect is dominant when we consider the yen as a nominal anchor for Asian countries: as of 1992, inflation rates had not converged, and the commodity composition of output and trade differed greatly between Japan and other East Asian countries. By contrast, EC members' commodity composition of output was, while not identical, sufficiently similar so that a movement of the ECU against the dollar was meaningful in facilitating a terms of trade change. A simultaneous movement of the yen, ringgit, and rupiah would do nothing to assist in adjusting to terms of trade changes, be they of petroleum, agricultural commodities, or other goods. Japan imports primary commodities from Southeast Asia and exports manufactures to it: if Malaysia, Indonesia, or Thailand used the yen as a nominal anchor, those countries would need to achieve a degree of price-level stability similar to that of Japan and simultaneously find other mechanisms for adjusting to terms of trade shocks.

Hence, I conclude that the use of the yen as a nominal anchor for Asian currencies will probably be weak for the foreseeable future. I do agree that price-level stability in Japan increases resistance to inflation in other countries, but not sufficiently to bring about convergence in inflation rates.

At any event, integration of trade need not mean currency integration, at least for the next decade. To the extent that the Southeast and East Asian countries continue their rapid growth, convergence in living standards, economic structures, and inflation rates may begin to occur. As that happens, there may be more scope in the future for an Asian currency area.

Reference

Mundell, Robert A. 1961. A theory of optimum currency areas. *American Economic Review* 51 (September): 657–65.